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9D-HR-19412-Holmes et al.
PATENT**Remarks**

Claims 1-24 are now pending in this application. Claims 1-7 and 13-19 are rejected. Claims 8-12 and 20-24 are objected to. Claims 1, 8, 12, 13, and 20 have been amended. No new matter has been added.

The rejection of Claims 1-7 and 13-19 under 35 U.S.C. § 103(a) as being unpatentable over Sigelman et al. (U.S. Patent No. 4,691,195) in view of Sidebottom (U.S. Patent No. 4,463,348) is respectfully traversed.

Sigelman et al. describe a circuitry including a battery, a sense oscillator, a phase shifter (120), a discriminator (130), a time delay (140), and a chirp alarm (160) (Figure 3). Waveforms for various points in the circuit include waveforms B and C (column 3, lines 62-64). During a time when a door of a refrigerator is closed, the waveforms B and C are out of phase (column 4, lines 10-12). Upon the opening of the door the waveforms B and C are in phase (column 4, lines 12-13). The waveforms B and C are fed to the discriminator which includes two exclusive NOR gates (131, 132) connected with an appropriate resistor R₄ and capacitor C₄ to provide a waveform D (column 4, lines 14-17).

Sidebottom describes a system including indicator lamps (31, 32, 33) that are provided in a display means (30) to serve as indicia operated in response to an output signal from a microcomputer (25) to indicate at least when a rolling average door-open time is in excess of a normal range of door-open times (column 4, lines 7-11). Thus the indicator lamp (31) with a suitable marking such as "Heavy" may be a red indicator lamp which, when lit, would indicate unusually heavy usage of a refrigerator encouraging a user to reduce, for example, an amount of time a door of the refrigerator is held open (column 4, lines 11-16). For a more complete display, the indicator lamp (32), marked "Normal" and colored green, for example, may be provided to indicate normal level of usage while the indicator lamp (33), marked "Light" and colored orange, for example, may be provided to indicate a low amount of usage (column 4, lines 16-21). The microcomputer includes an accumulator means responsive to a door-open sensing means and to a clock means for accumulating a count representative of an amount of door-open time occurring in each of a plurality

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of successive time segments, where, for example, the time segments might be of fifteen minutes duration each (column 2, lines 1-7).

Claim 1 recites a method for detecting an open door of a refrigerator, the refrigerator including at least one door including a first door, at least one switch including a first switch configured to be activated by opening of the first door, and at least one detection circuit including at least one phase shift circuit coupled to an opto-coupler and a processor, the method including the steps of "receiving a signal from said first switch when said first switch is activated; phase-shifting the signal; feeding the phase-shifted signal to the processor; monitoring an output signal from the opto-coupler; and comparing said output signal with a line signal to determine whether the first door is open."

Neither Sigelman et al. nor Sidebottom, considered alone or in combination, describe or suggest a method for detecting an open door as recited in Claim 1. Specifically, neither Sigelman et al. nor Sidebottom, considered alone or in combination, describe or suggest feeding the phase-shifted signal to the processor, monitoring an output signal from the opto-coupler, and comparing the output signal with a line signal to determine whether the first door is open. Rather, Sigelman et al. describe feeding waveforms B and C to a discriminator which includes two exclusive NOR gates connected with an appropriate resistor R₄ and capacitor C₄. Sigelman et al. does not describe or suggest a processor. Sidebottom describes responding, by a microcomputer including an accumulator means, to a door-open sensing means and to a clock means for accumulating a count representative of an amount of door-open time occurring in each of a plurality of successive time segments. Sidebottom further describes operating indicator lamps in response to an output signal from a microcomputer to indicate at least when a rolling average door-open time is in excess of a normal range of door-open times. Sidebottom also describes indicating a normal level of usage and a low level of usage. Sidebottom does not describe or suggest phase shifting. Accordingly, neither Sigelman et al. nor Sidebottom, considered alone or in combination, describe or suggest feeding the phase-shifted signal to the processor, monitoring, and comparing the output signal from the optocoupler with a line signal as recited in Claim 1. For the reasons set forth above, Claim 1 is submitted to be patentable over Sigelman et al. in view of Sidebottom.

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Claims 2-7 depend from independent Claim 1. When the recitations of Claims 2-7 are considered in combination with the recitations of Claim 1, Applicants submit that dependent Claims 2-7 likewise are patentable over Sigelman et al. in view of Sidebottom.

Claim 13 recites an apparatus for detecting refrigerator door openings, the refrigerator including at least one switch configured to be activated by a door opening, the apparatus configured to "phase-shift a signal output by an activated switch; determine whether a door is open using the shifted signal; and provide the shifted signal to a microcontroller."

Neither Sigelman et al. nor Sidebottom, considered alone or in combination, describe or suggest an apparatus for detecting refrigerator door openings as recited in Claim 13. Specifically, neither Sigelman et al. nor Sidebottom, considered alone or in combination, describe or suggest the apparatus configured to provide the shifted signal to a microcontroller. Rather, Sigelman et al. describe feeding waveforms B and C to a discriminator which includes two exclusive NOR gates connected with an appropriate resistor R₄ and capacitor C₄. Sigelman et al. does not describe or suggest a microcontroller. Sidebottom describes responding, by a microcomputer including an accumulator means, to a door-open sensing means and to a clock means for accumulating a count representative of an amount of door-open time occurring in each of a plurality of successive time segments. Sidebottom further describes operating indicator lamps in response to an output signal from a microcomputer to indicate at least when a rolling average door-open time is in excess of a normal range of door-open times. Sidebottom also describes indicating a normal level of usage and a low level of usage. Sidebottom does not describe or suggest phase shifting. Accordingly, neither Sigelman et al. nor Sidebottom, considered alone or in combination, describe or suggest the apparatus configured to provide the shifted signal to a microcontroller. For the reasons set forth above, Claim 13 is submitted to be patentable over Sigelman et al. in view of Sidebottom.

Claims 14-19 depend from independent Claim 13. When the recitations of Claims 14-19 are considered in combination with the recitations of Claim 13,

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Applicants submit that dependent Claims 14-19 likewise are patentable over Sigelman et al. in view of Sidebottom.

For at least the reasons set forth above, Applicants respectfully request that the Section 103 rejection of Claims 1-7 and 13-19 be withdrawn.

Moreover, Applicants respectfully submit that the Section 103 rejection of Claims 1-7 and 13-19 is not a proper rejection. As is well established, obviousness cannot be established by combining the teachings of the cited art to produce the claimed invention, absent some teaching, suggestion, or incentive supporting the combination. Neither Sigelman et al. nor Sidebottom, considered alone or in combination, describe or suggest the claimed combination. Furthermore, in contrast to the assertion within the Office Action, Applicants respectfully submit that it would not be obvious to one skilled in the art to combine Sigelman et al. with Sidebottom because there is no motivation to combine the references suggested in the cited art itself.

As the Federal Circuit has recognized, obviousness is not established merely by combining references having different individual elements of pending claims. Ex parte Levingood, 28 U.S.P.Q.2d 1300 (Bd. Pat. App. & Inter. 1993). MPEP 2143.01. Rather, there must be some suggestion, outside of Applicants' disclosure, in the prior art to combine such references, and a reasonable expectation of success must be both found in the prior art, and not based on Applicants' disclosure. In re Vaeck, 20 U.S.P.Q.2d 1436 (Fed. Cir. 1991). In the present case, neither a suggestion or motivation to combine the prior art disclosures, nor any reasonable expectation of success has been shown.

Furthermore, it is impermissible to use the claimed invention as an instruction manual or "template" to piece together the teachings of the cited art so that the claimed invention is rendered obvious. Specifically, one cannot use hindsight reconstruction to pick and choose among isolated disclosures in the art to deprecate the claimed invention. Further, it is impermissible to pick and choose from any one reference only so much of it as will support a given position, to the exclusion of other parts necessary to the full appreciation of what such reference fairly suggests to one of

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ordinary skill in the art. The present Section 103 rejection is based on a combination of teachings selected from multiple patents in an attempt to arrive at the claimed invention. Specifically, Sigelman et al. teach feeding waveforms B and C to a discriminator which includes two exclusive NOR gates connected with an appropriate resistor R₄ and capacitor C₄. Sidebottom teaches responding, by a microcomputer including an accumulator means, to a door-open sensing means and to a clock means for accumulating a count representative of an amount of door-open time occurring in each of a plurality of successive time segments. Sidebottom further teaches operating indicator lamps in response to an output signal from a microcomputer to indicate at least when a rolling average door-open time is in excess of a normal range of door-open times. Sidebottom also teaches indicating a normal level of usage and a low level of usage. Since there is no teaching nor suggestion in the cited art for the combination, the Section 103 rejection appears to be based on a hindsight reconstruction in which isolated disclosures have been picked and chosen in an attempt to deprecate the present invention. Of course, such a combination is impermissible, and for this reason alone, Applicants request that the Section 103 rejection of Claims 1-7 and 13-19 be withdrawn.

For at least the reasons set forth above, Applicants respectfully request that the rejections of Claims 1-7 and 13-19 under 35 U.S.C. 103(a) be withdrawn.

Claims 8-12 and 20-24 have been indicated to be allowable if rewritten in independent form to include all of the limitations of the base claim and any intervening claims.

Claims 8-12 depend from independent Claim 1. For at least the reasons set forth above, Claim 1 is patentable over the cited art. When the recitations of Claims 8-12 are considered in combination with the recitations of Claim 1, Applicants respectfully submit that Claims 8-12 likewise are patentable over the cited art and in condition for allowance.

Claim 20 has been rewritten to include all of the recitations of independent Claim 13. Accordingly, Claim 20 is submitted to be in condition for allowance.

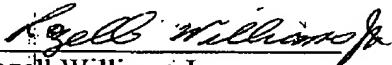
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Claims 21-24 depend from independent Claim 20. When the recitations of Claims 21-24 are considered in combination with the recitations of Claim 20, Applicants respectfully submit that Claims 21-24 likewise are in condition for allowance.

In view of the foregoing amendment and remarks, all the claims now active in this application are believed to be in condition for allowance. Reconsideration and favorable action is respectfully solicited.

Respectfully Submitted,


Rozell Williams Jr.
Registration No. 44,403
ARMSTRONG TEASDALE LLP
One Metropolitan Square, Suite 2600
St. Louis, Missouri 63102-2740
(314) 621-5070